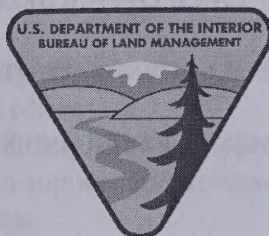


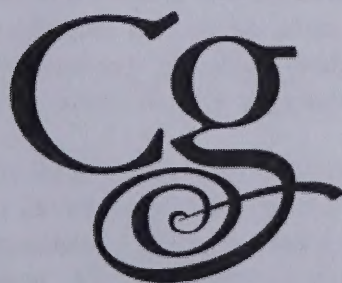
BUREAU OF LAND MANAGEMENT

**ASSESSMENT, INVENTORY, AND MONITORING
STRATEGY: LOCAL MONITORING SURVEY**



Report to the Local Monitoring Survey Team

September 2006



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c o n s u l t i n g

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I. INTRODUCTION & BACKGROUND

The Bureau of Land Management (BLM) is currently engaged in a study of its Assessment, Inventory, and Monitoring (AIM) strategy. This study is being undertaken to understand its current processes for collecting, storing, analyzing and using data to inform its stakeholders and to make land management decisions. The Office of Management and Budget has identified a number of deficiencies in BLM's data collection activities, including inadequate base-line data and insufficient resource monitoring to support management decisions and to evaluate the effectiveness of restoration activities. This recent scrutiny from DOI and OMB about the "bang for the buck" from this AIM work is one driver of the study. The belief is that the current processes do not represent a cohesive, organized and systematic strategy to understand the health of the land at any level of granularity (see October 25, 2006 Report to ELT). A meeting was held in Albuquerque in FY 05 in which the local-level study was designed to:

1. Evaluate existing monitoring and assessment activities at the field office level and develop proposals to enhance the integration of these activities across resource programs and to enhance the linkages between these activities and land use planning.
2. Evaluate how the results of land health assessments are currently reported and develop proposals to enhance BLM's ability to "roll-up" the results of these assessments to the state and national level.

In Albuquerque, the local-level work group identified the following hypotheses, to be explored in an assessment of field offices.

- *Inconsistencies.* The availability, amount, type and use of quantitative and qualitative data collected in support and defense of land health decisions is inconsistent between offices.
- *Inefficiencies.* There are inefficiencies in the Bureau's monitoring program, including 1) data being collected that are not used; 2) duplicated efforts; 3) limited utility of data; 4) limited access and sharing of data; 5) lack of coordination with other agencies and within BLM; 6) cost outweighs the benefit of data collection; 7) inefficient data storage and management; and 8) discontinuity of data.
- *Integration.* There is a lack of coordination between resource programs. Barriers to integration include: 1) the Bureau's budget process does not promote integration; 2) duplication and overlap in monitoring efforts; 3) lack of adequate monitoring planning; 4) different socio-economics and personal values affect integration; 5) limited integration of planning, budget development and work force planning; and 6) local priorities lack adequate integration with directives.

There are two components of the local scale project – Context Development and the Field Office Evaluation. The *Context Development* component will provide an understanding of past and present inventory, monitoring and assessment initiatives, funding, organizations, policy and guidance. This component will inform the recommendations resulting from the Field Office evaluation and the land health assessment reporting review.

The *Field Office Evaluation* is intended to determine what data are being collected, what drives data collection, how are data being used, whether adequate protocols exist that are being followed, how are data being stored, and lastly the relationship of the data collection to land use plans.

This report details the methodology, results and findings of the survey portion of the *Field Office Evaluation*, a central part of the local-level study.

II. METHODOLOGY

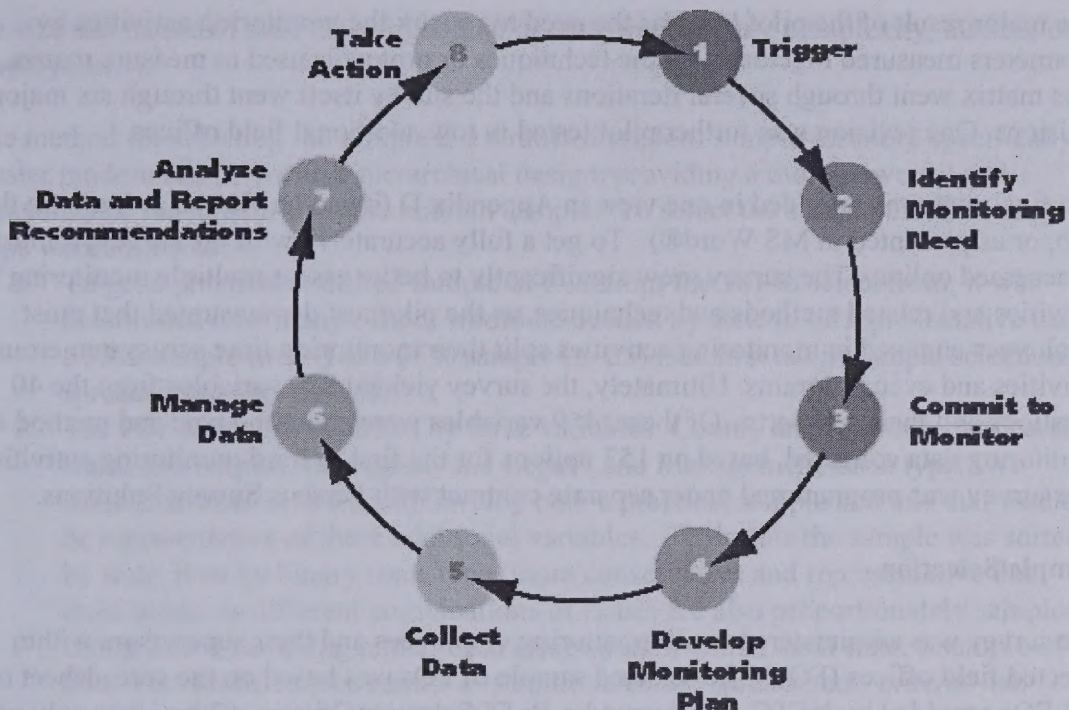
A team of HQ and field office staff were brought together to design the survey and to advise the Bureau-wide AIM Strategy team on the local-level study. The Local Scale Work Group Members who worked on the survey were: Dan Muller, Steve Klessens, Steve Cohn, Rob Burton, Jenna Whitlock, Elroy Masters, and Anita Arends. Kevin Coray, of Coray Gurnitz Consulting, Inc., was the contractor on the team. In addition, Kit Muller, Steve Tryon and Gordon Toevs have provided input on the survey results from the local-level study.

The primary phases within the methodology were:

1. initial survey scope and construct development;
2. development of the pilot test pool of questions and demographics;
3. pilot test survey programming;
4. pilot test administration;
5. pilot test data analysis and evaluation of survey;
6. survey refinement; final survey programming;
7. survey administration;
8. data preparation;
9. data analysis;
10. initial briefing to team; and
11. final report development.

Survey Development & Pilot Test

The Local-Level AIM Team (LAIM) originally envisioned that data should be collected from field office employees who are involved in some way in AIM work. A schematic was drafted to depict a hypothesis about the key drivers of AIM work at the local level, with the initial belief that the key drivers for monitoring were—plans, permits, and/or projects required by programs (see below).



A subsequent discussion surrounded the constructs around which to design the survey (demographics of AIM workers, data collection methods, data types and storage, analysis of AIM data, decision support using AIM data). The original conceptual idea of the survey was a relatively short survey (under 40 questions) to keep survey taking time short. The survey was to be administered in a web-based environment to reduce time to take the survey by taking advantage of technology to use logical branching to minimize the number of questions a respondent would need to read to complete the survey (e.g. supervisors needed to answer fewer questions than monitoring employees), as well as to facilitate data entry and analysis.

Given this general framework, the LAIM team met to generate items in each of the driver by construct categories. However, while this framework worked in large part, the difficulty of understanding methods for data collection across professions became readily apparent. Specifically, the multiple use mandate and variety of resource values combine to produce an extremely large universe of monitoring activities by parameters measured together with the techniques or protocols used to measure.

The LAIM team grappled with several designs to get a handle on a somewhat limited, yet sufficiently specific set of demographic combinations of monitoring activities by parameters measured together with the techniques or protocols used to measure. We settled on one possible design, developed a set of pilot test questions, and administered the survey on 8/13/05 in the Roswell, NM Field Office to assess the effectiveness of the questions. In late August 2005, the LAIM team met in Roswell to debrief the results of the pilot test of the survey. The agenda, debriefing protocol, and resulting findings are included as Appendix C.

One major result of the pilot test was the need to rework the monitoring activities by parameters measured together with the techniques or protocols used to measure matrix. This matrix went through several iterations and the survey itself went through six major revisions. One revision was further pilot tested in two additional field offices.

The final survey is provided in one view in Appendix D (it can be viewed in html, on the web, or as presented in MS Word®). To get a fully accurate view of the survey, it must be accessed online. The survey grew significantly to better assess multiple monitoring activities and related methods and techniques, as the pilot test demonstrated that most employees engaged in monitoring activities split their monitoring time across numerous activities and even programs. Ultimately, the survey yielded 820 variables from the 40 questions and their sub-parts. Of these, 459 variables were about the type and method of monitoring data collected, based on 153 options for the first to third monitoring activities. The survey was programmed under separate contract with Perseus Survey Solutions.

Sample Selection

The survey was administered to all monitoring employees and their supervisors within selected field offices (FO). The selected sample of FOs was based on the spreadsheet of 101 FOs provided by NSTC (see Appendix B: FOSelectionCriteria_v2-by issue only.xls; the selected sample is in the "criteria" tab with 1's in col. AA (the first 34 offices). These offices are listed in the "Other Offices" tab.

Two major questions focused the sample selection: how many monitoring employees are there and how are they distributed? Further, monitoring activity also includes management direction prior to and during actual monitoring data collection and analysis and decision making based on monitoring results. So, a wide range of employees can be construed to be involved in monitoring in some way. The team decided to draw the sample from the 101 FOs, and not State, Area or District Offices since we believed there were fewer monitoring employees in these higher tiered offices. Field Stations were also removed as being dissimilar in geographic size, i.e. significantly smaller than FOs. Thirty-one offices below the state level were excluded for these reasons.

Discussions were held about whether sampling should be completed based on office or monitoring employee to get the appropriate level of confidence. If offices were used as the unit of analysis or a random sample of employees was developed, virtually every FO would need to be included to get an appropriate level of confidence. However, the real issue was not the monitoring activities of offices, but of employees as guided by management more generally. Thus, we wanted to obtain a random sample of monitoring employees. But to both reduce the impact on the field and to increase the statistical power of the results to be generalized, we decided to build a representative sample of FOs and ask for all monitoring employees within those FOs to take the survey. Based on reviewing the job series of employees in 12 of the FOs in the final sample, it was estimated that about 3-19 employees per FO were involved in monitoring, depending on

the size and nature of the FO (e.g. geographic size, multiple-use complexity, number of employees...¹).

The method for selecting the sample is a stratified random sample (or more specifically a cluster random sample) with a hierarchical design, providing a more powerful and generalizable result than a simple random sample. To select the sample the following steps were followed:

1. To get a practical stratified sample of FOs from the 101 to select from, it was determined how many offices would be needed by state to be representative using a 33% sample (n=34) or a 25% sample (n=25) (see first tab in sample selection spreadsheet, Appendix B).
2. The FOs were also stratified by three variables: County and Metropolitan/Rural or Rural and Airport, Ecoregion, and Legal/Land Management Issue type. We examined whether we could develop both a practical sample and one that would be representative of these additional variables. To do this the sample was sorted by state, then by binary issue type (more conservative and representative than issue alone, as different combinations of issues are also proportionately sampled). Using a 25% sampling rate of each issue stratum within each state, a sample of 49 FOs was identified (see results in sample selection spreadsheet "criteria" tab column AC, Appendix B). This number of FOs was judged impractical.
3. Using a less conservative but still sound sampling methodology, the FOs were resorted first by binary issue type, then state.
4. Selecting every fourth case of every binary Legal/Land Management Issue type (a 25% random selection) resulted in a sample that was also nearly representative by state. However, if 25% representation of the state stratum was desired, then UT and MT were under-sampled. To solve for this, two as yet unselected UT offices and one MT office were selected. This resulted in a sample of 34 FOs, which was judged to be practically acceptable.
5. Finally with 101 FOs and with an average of 10 monitoring employees per office, then the universe is at maximum about 1010 employees. Thus, 277 respondents would produce a 95% confidence level given random selection. With the more robust stratified random sampling used, this number of respondents produces a sound sample for which results may be generalized to the entire BLM FO universe. This assumes that 1) estimates are correct for number of monitoring employees, and 2) no monitoring employee response bias was exhibited in the final response rate.

It was decided to carry ecoregion and metro type as variables for possible analysis, rather than trying to stratify the sample further, as these would create both a larger, impractical sample. Square miles per FO was not included as a variable, but may have facilitated a geographic description of the results.

Response Rate. The survey resulted in 277 responses from 32 of the 34 FOs in the sample. This result was sufficient to attain the 95% level of confidence ($\pm 5\%$).

¹ Email communication from Jenna Whitlock, 8/28/06.

Survey Administration, Data Collection & Preparation for Analysis

Survey Administration. The survey was administered between June 22, 2006 and Aug. 28, 2006. The survey was a web-enabled instrument. IM 2006-169 was emailed to the Field Managers and Assistant Field Managers of the Selected FOs to announce the survey and transmit the web link to monitoring employees (see Appendix D). As time elapsed, we monitored the response rate and at various times sent email reminders and escalated the reminders to supervisors generally and then to specific field offices which were in the sample but which had low response rates. The time was extended twice for survey completion.

Since the survey was web-enabled, it was possible to download the data directly in three formats ready for analysis: 1) SPSS file, 2) excel spreadsheet for ease of viewing, and 3) text file for comments. This electronic data collection greatly facilitated data clean up and preparation for analysis.

Data Cleanup. The pilot test demonstrated that a variety of open-ended demographic questions (such as field office name and organization code) needed to be turned into drop down windows to reduce data cleanup and potential loss of useful responses. This was reflected in the final survey. However, some cleanup was still necessary. Jenna Whitlock and Kevin Coray resolved the various issues and Kevin Coray recoded variables that were unclear from open-ended questions. Out of range edits were included for most quantitative variables as part of the survey programming. However, some variable values had to be recoded or eliminated after post-survey range checks were completed.

Analysis Files. The box at right describes the files developed to analyze the local-level monitoring survey data. The 277 employees who responded to the survey comprise the full data file.

Of these, 161 said that they spent 10% or more of their time in actual monitoring (see question 4, Appendix D; on average these employees spent 30%-49% of their work time in monitoring activities). This sub-set of the full data file comprised the monitoring employee (ME) sub-sample. These 161 respondents then answered a set of questions for their top 1-3 monitoring activities, assuming that 3 activities would account for most of the monitoring activity completed.

Analysis Files:

- Full data file:
 - 277 respondents
 - Confidence: 95% $\pm$ 5%
 - 822 variables
- Monitoring Employee sub-sample
 - N=161 respondents, all of whom reported one or more monitoring activities
 - Same variables as full data file
- Monitoring Activity data file
 - N=414 cases
 - Confidence: 95% $\pm$ 3.7%
 - 1-3 cases per ME respondent
 - Reduced set of variables (e.g. fewer comments, emphasis on variables to be analyzed by MA)
- Full text comment files
 - For various open ended questions with responses >255 characters

A monitoring activity data file was created by splitting the data for a specific ME into 1-3 separate records, one for each of the monitoring activities and the associated variables for that activity (e.g. method, techniques, amount of time...). This resulted in a data file with 414 monitoring activities available as the focus of analysis, as opposed to the employees themselves.

For qualitative questions, a full-text file is available.

Analyses. The following questions guided the analysis of the data:

1. What data are we collecting regarding natural resource conditions, and with what frequency?
 - Who collects what data?
2. Why are we collecting those data?
3. How are data collected?
4. How are data stored and analyzed?
5. How, and by whom, are the data being used?
 - In particular, does analysis of the data lead to management recommendations and does it help the BLM understand conditions and trends?
6. Does analysis of the data help us determine our effectiveness, and thereby help us focus our investments?

A full array of descriptive statistics (e.g. item frequency distributions, means, medians, standard deviations, etc.), cross-tabulations, sub-group mean comparisons, as well as content analyses of the open-ended question comments were completed to address these questions.

III. RESULTS AND FINDINGS

Results. The results of the statistical analyses of the survey data were presented to the augmented LAIM team. This MS Powerpoint® presentation is included in Appendix A. The presentation was organized according to the questions listed in the *Analysis* Sub-section above.

Findings. The LAIM team then abstracted key findings from the results within the *Inconsistencies, Inefficiencies, and Integration* framework described in the **Introduction and Background** Section. A summary of these findings is included in the table below.

Area		Findings
Managing Risks and Demonstrating Results	Statutory Mandates	Have multiple general and specific AIM mandates. Guidance developed in response to specific needs. Not integrated Critical terms and associated data requirements are not defined Some guidance is out of date and delegations of authority aren't clear. Generally have good guidance for specific mandates. Generally have poor guidance for broader mandates.
	Environmental Mitigation	Make monitoring commitments in EIS & EA decision records GAO, IG & internal evaluations suggest insufficeint follow-through.
	Demonstrating Results	Hill, OMB & DOI expect us to demonstrate results. Generally speaking we don't have poli-cedures in place to do this.
Connecting the Dots	Critical Components of Monitoring	Critical components of a sound monitoring program are missing. Management questions are not clearly identified. Monitoring plans are not prepared. Monitoring results are not available.
	Integration of Planning &	Insufficient understanding of the relationships among AIM, planning and permitting. Generally speaking, there appears to be a better understanding of these relationships in the PNW and in the range/riparian program.
Acting Corporately	Across BLM Programs	AIM activities are not connected across programs. Many programs are not participating in LHA even though LUP ROD's make cross-program commitments. Cross discipline monitoring model lacking/work on developing budget targets & program logic models - Kevin Wide range of data collection & management methods/more standardization & automation of methods – Kevin Little data is effectively shared.
	Across BLM Offices	Activities are not connected across offices

The table above includes findings from a variety of sources. However, findings specific to the Monitoring Employee Survey are included below with some suggested recommendations and data gaps specific to a particular finding for use of the LAIM team

as it goes forward with its work. Finding-specific comments in red came from initial review by the LAIM team.

SUMMARY FINDING 1

In addition, it is clear that AIM policies are developed without regard to any model of behavior that should apply to all disciplines and all field operations. That is, not only is AIM information being gathered independently by each of our field offices, the over-arching policies that drive the data collection have been developed by programs operating independently of each other. Much of the MA helps the immediate local multiple use customer to get the permit or use authorization needed and/or to comply with regulations, the bigger picture of the health of the land overall remains illusive. Some key indicators:

1. Only half of the data are effective in describing existing conditions, explaining changes in conditions, or in correlating trends in conditions with management actions. (q28a1-3). However data are consistent enough and frequent enough to describe trends (q22 & 24, % favorable=87% & 69% respectively) and based on an ecological model (63% favorable, q24aaa). So, one explanation is that the data are program-specific and poorly integrated, as further demonstrated below.
 2. Only about 275 of data are effective in serving across programs or at an aggregated level above FOs. (q28a4-5)
 3. Data are seldom coordinated (74% unfavorable, q31), seldom reported (54% unfavorable, q34), and seldom shared with the public (74% unfavorable, q34a).
 4. 50% of employees report that data quality or lack of data has been an issue in appeals or lawsuits over the last 3 years (q32).
 5. When asked whether analysis of the monitoring data help us determine our effectiveness, and thereby help us focus our investments from five different aspects (e.g. supporting land management decisions, deciding if land management decision are having the desired effect, determining land management priorities), employee responses generate a normal distribution, suggesting there is significant room for improvement. (q35, q37-q39)
 6. Most MEs think at least 40% of MAs are NOT conducted according to a monitoring plan. (q29)
 7. MEs say guidance, supervision and training for monitoring is effective (q18-q21). So, the results above suggest that such guidance, training and supervision is fragmented by program rather than more holistic.
 8. PEs to control MA are all over the map. While certain PEs are more often used than others within a program, 14 or more PEs are used by each of the top five MAs (range-23 PEs, riparian-20 PEs...) (q 8a1-39). For 12 MAs, including 3 of the top 5, employees report less than adequate PE to activity match (50% favorable, q9a). These results suggest that ABC may not be driving MA.
- A significant amount on this data doesn't appear to help us describe current condition or trend.
 - A significant amount of this data doesn't appear to be summarized in a report or shared with the public.
 - A significant amount of this data does not appear to effect management decision-making.

The findings that follow this page also support and expand this overall finding.

RECOMMENDATION

This begs the question of whether the allocation of MA funds and resources gets what is most needed. Program differences and program-specific legislation/regulations/ court actions have exacerbated this problem (e.g. '95 Range Reform, Cobell, NW Forest Plan...). If a set of program logic models were developed to look at the overall set of outcomes for which the legislation guides achievement and then such outcomes were prioritized at the multiple levels, national, state and local, a different picture and allocation of resources might emerge. Further, such priorities would need to be coordinated across programs to attempt to get a much better bang for the buck. As legislation is passed, such overall priorities will need to be continually adjusted.

- Guidance, plans, techniques, analytical methodologies, and reporting requirements create positive feedback loops with partners and stakeholders. Critical to work with State, especially with wildlife, water, recreation.

DATA GAPS

Program-specific analyses and missing programs in the data.

- Why doesn't a significant amount of this data help us describe condition and trend? Poorly phrased questions? Lack of reference conditions? Changing techniques? Loss of institutional memory? Absence of monitoring plans? Absence of analysis? Absence of reports? Absence of guidance?
- Do we need guidance on analysis and reporting?
- Why doesn't data appear to effect management decision-making?
- Is there a significant difference between how managers and monitoring employees responded to questions 35-40?

FINDING 2

The connection between data collection and land use planning efforts is unclear to many employees, perhaps because the connection of assessment activities to land use planning efforts is itself unclear. Specifically, 39% of all monitoring activities are driven by permitting or other use authorizations. In the two MAs that account for 35% of all MA (Range/Upland Health and Riparian) 55% and 49% of MAs are driven by permits.

Further, much less of BLM's monitoring is driven by Resource Management Plan decisions (15%). When MEs are asked why monitoring data is most needed, RMPs are ranked lowest. (q13a1-6)

As such, the local and program-specific nature of monitoring reduces the ability of BLM to accomplish more holistic land management and may lead to sub-optimized land management decisions.

Q10a1-6

Driver	Percent
Permits or other Use Authorizations	39%
Program direction	18%
Proj's not subject to permitting	17%
Resource Management Plan decision	15%
Court Order or Settlement Implementation	1%

FINDING 3

Most AIM work is performed by agency staff, especially permanent employees(60% overall, q14a1-9), suggesting opportunities for use of contract staff, volunteers, and partners to augment work processes.

Further, 79% of data collected do not have any user or permittee funds to support such collection.

Two other results impact this Finding: q3b shows that 48% of MEs report an increase in monitoring over time; while 31% report a decrease; and 21% report no change; and Findings 5a and 5b show that automation and remote sensing are not used for monitoring as much as they might be.

RECOMMENDATION

Consider some fee-based permit and/or compliance work to help separate fee-based permitting and use authorization from more holistic MA. However, if fee-based work becomes the driver and it is not fully reimbursed, holism will be further subjugated to program-specific, local, multiple-use needs.

Further, if MA is increasing and FTPs do most of the work and the no. of FTPs is holding steady or decreasing, then contracting out in particular in use of new automation for monitoring may be worth investigating.

DATA GAPS

- Why aren't we making more use of contractors, partners, and volunteers?
- What are the impediments to using their services?
- Where have they done a good job? Where haven't they? And why?
- Where are we collecting data electronically?
- How can electronic data collection be encouraged?
- Is the use of remote sensed data widely understood?
- How can there be a shortage of monitoring resources?
- How are exiting monitoring resources allocated?

FINDING 4

Employees who identify themselves using range/riparian methods, or following guidance of the Northwest Forest Plan, seem to have a clearer understanding of AIM policies, procedures, and the connection of their work to management's needs than do employees in other disciplines.

- Much of the "systematic" monitoring is range-related.

- Range has resource condition objectives, many other programs don't.
- Land health and PFC assessments are embedded in the range program.
- Fire condition class assessments do not appear to be as embedded in the resource programs.
- Soil is important to range, not fire.

DATA GAPS

This finding could be clarified and verified by analyzing the survey data by office or region to determine if offices that are primarily focused on range or timber have a better understanding of AIM policies, procedures and management needs.

Further, We may need to verify in interviews how the Range Reform regulations changed monitoring habits. Some offices appear to be able to do both. Others gave up the long-term monitoring for qualitative rangeland health assessments.

How many are O&C foresters, vs. not. Where's FRCC being used? Not using FRCC in forestry world.

Note: Recent 2006 Regulations require quantitative data to support qualitative data.

FINDING 5a

Data collection in the BLM is still primarily in hard copy, with relatively little use of database management systems or transcription of information into geographic information systems (GIS). About half of the data are primarily stored and analyzed using Commercial Off-the-Shelf applications or locally developed applications. About 40% of the monitoring data collected is currently in GIS, even though about 60% of the data could be tied to GIS. This situation would impair analysis at a level above the FO. Further, staff report that only 27% of data are effective in serving across programs or aggregated to higher levels such as to the state or national levels. There are big differences across programs in this set of findings. (q25 & 28)

RECOMMENDATION

Determine which data are needed at a higher level and/or cause BLM to be at risk by being available only in hard copy. Since some programs are in better shape than others, 80:20 thinking should drive these decisions. I.e. where can 80% of the benefit be gained from 20% of the effort?

- There must be a tie between our data bases and our evaluations.
- We need data base management, not simply electronic excel spread sheets.
- We need electronic data bases in order to share data with our partners and acquire data from them.

DATA GAPS

- What needs to be rolled-up to the state and nationally?
- What should be stored electronically? Current data? Historic data? Some mixture?

FINDING 5b

Monitoring data are typically collected in the field, rather than using remote sensing information (only 19% report using any remote sensing, of those only 3 MAs get more than 10% of data via remote sensing). Employees are unsure of how best to use remote sensing information. (Q16a1-4)

FINDING 6

A wide range of data and methods are used across and within programs. For the top 5 MAs, there 16 for range, 6 for riparian, 6 for animal population, 11 for forest, and 3 for invasives. (q6)

RECOMMENDATION

Some economies of scale might be achieved by more standardization and automation of methods if quality is not adversely impacted.

General Data Gaps.

The two following tables present the data gaps identified by the LAIM team, first for the survey analysis itself, and second for additional monitoring employee data collection if warranted.

Data Gaps That Could Be Filled From Additional Survey Analysis
Geographic representations – look at data by various regional areas.
Sort by type of work (sage grouse, OHV, oil and gas, forestry)
Do some program areas have their poop in a pile more than others?
Is there a any major difference in the findings above depending on office size? For example if the office has >20 Mes v. <20 Mes is there a difference in connection with LUP, ...?
Do Fos with active or just completed LUPs/RMPs or recent court actions differ on findings from others?
Other analyses • Correlational analyses • Add in geographic data (if warranted) • Add in estimates of monitoring strength in Fos • Connection to studies at State or Nat'l level
Sample issues: • By job type (e.g. recreation) • By MA • By Field Office • Q's 35-40, are there differences between supervisors and employees

Data Gaps From Local Group That Need Additional Data Collection, Either with Survey, Focus Groups or Interviews, or Other Existing Data Analysis

What are the actual number of MEs in the sample of FOs used in the survey? Is the estimate used correct?

Do the respondents per specialty reflect the no. of such employees in the field? It is clear that O&G and Recreation are under-represented. What is the level of representation for forestry, range, etc. If we are going to collect more data for O&G and rec., we should use the same opportunity to bolster any other under-represented group.

Run survey on additional field offices that were under represented.

- Do these responses reflect uncertainties over the difference between monitoring and compliance?
- Do these responses reflect the way respondents may have clumped activities?
- Is there a correlation between the responses and the respondents' disciplines?
- Should we consider consolidating some of the activities, e.g., riparian and water quality?
- How have the changes in the grazing regulations effected monitoring? Did we have a plan in place to address inventory, monitoring and assessments requirements when the regulations changed in the mid 90's? De we have one now?
- To what extent are the non-range programs monitoring resource conditions?
- To what extent are the non-range programs using land health assessments? Should we recommend that all of the programs should embrace this approach?
- Will the forest/woodland results be different if sorted regionally.
- Is fragmentation a local issue as well as a regional issue?
- Why do some programs think that the PE's are not representative of their work?
- Do the "court order" responses reflect the offices surveyed?
- Do the "planning" responses reflect an absence of Field Office and RMP monitoring plans or the importance of activity level plans in driving our monitoring activities?
- Should RMPs be monitoring drivers?
- Should Field Office or RMP monitoring plans be required?

IV. NEXT STEPS

The next steps on this effort are:

- Determine which data gaps to fill and fill them
- Generate a more complete set of recommendations coming from the survey, integrated with other data collection efforts and analyses completed by the LAIM team
- Consider revising the survey and using it as a tool in evaluations of AIM strategy implementation as it progresses.

Appendix A: Detailed Results Briefing

See separate file

Focus Group Agenda

Pilot Test of Monitoring Survey v1.0 (Roswell, NM)

8/18/15

Time	Topic	Process
7:30	Preparation, set up projector, connect to laptop and bring up survey. Great P10	Jenna Whitbeck & Kevin Conay
8:00	Introduction and Purpose	Steve Brown
8:15	Review agenda	Kevin Conay
8:45	Survey of the Week 1. Length of time to complete the survey is a major concern 2. Estimate what percent of the survey is working well/good 3. Was there anything about the survey that made it so you couldn't take it or couldn't make sense of it or got lost (not answered by question)	Jenna to stand on a flipchart Someone else on a laptop to record using a PC, as Jenna experienced a flipchart
9:00	Survey questions are review questions on test form	Kevin to stand on a flipchart to record Jenna to stand on a flipchart We'll review their feedback together at a large group and then later talk of the forms.
10:00	Break	Jenna to stand on a flipchart Someone else on laptop to record into a PC, as Jenna experienced a flipchart
10:15	Continued review	Jenna to check in to see if this is going okay
11:30	Survey in general and close. 10-11 follow up close out	
12:45	Post-survey close	

Appendix C: Pilot Test Debriefing Agenda, Protocol, and Findings

Focus Group Agenda

Pilot Test of Monitoring Survey v1.0 (Roswell, NM)

8/18/05

Time	Topic	Process
7:30	Preparation: set up projector, connect to laptop and bring up survey. Greet FM	Jenna Whitlock & Kevin Coray
8:00	Introductions and Purpose	Steve Tryon
8:15	Review agenda	Kevin Coray
8:30	General feedback ⇒ Length of time to complete (do this as a round robin) ⇒ Estimate what percent of the survey worked well (ditto) ⇒ Was there anything about the survey that made it so you couldn't take it or couldn't make sense of it in general (not question by question)	Jenna to record on a flipchart Someone else on a team to record into a PC, as Jenna captures on a flipchart
9:00	Review questions (see review questions on next page)	Kevin-ask participants to use feedback forms for review. We'll review their feedback together as a large group and then later collect the forms. Jenna to record on a flipchart Someone else on team to record into a PC, as Jenna captures on a flipchart
10:00	break	Team check in to see if this is going okay
10:15	Continue review	
11:30	Move to general questions 19-21 below to close out	
12:00	Plan next steps	

General Observations:

Answers:

The survey is too range/wildlife-centric. Questions should be broadened to address Lands and Energy disciplines. Invasive species, while it is a renewable program, is not covered by the survey.

Survey respondents should include all major disciplines to be a valid sample. More than one from some discipline may take the survey, but at least one must take it. Managers in each office should also take the survey, and indicate the resources they manage. You might need to structure the survey so that managers skip over some of the questions.

One respondent thought the questions directed the responses to be too negative.

Clarify that the survey covers land health, not user satisfaction or cultural resource protection.

None of the survey questions address frequency of monitoring.

No way to skip questions if they do not apply. (Planning, Lands & Realty, Oil and Gas)

Lands and Realty and Energy programs lack guidelines on surface disturbance. That finding would be clearly established if the questions included those programs.

Add something regarding the confidentiality of the responses when the data are rolled up.

Clarify how to save your work if you need to interrupt the test-taking.

Review Questions:

1. In the instructions and the email to you to take the survey, were the instructions and definitions clear? If not why not? Was a three year time frame appropriate for you? Why or why not?

Answers: The instructions suggest that Lands and Realty specialists should not take the survey. If specialists outside range and wildlife try to take the survey anyhow, they can't skip inapplicable questions. That's a fundamental flaw of the survey design.

3 years is an appropriate time. It is essential to have some duration specified.

The exclusion of "compliance" is too broad. Some kinds of compliance monitoring, such as whether stipulations for land health have been met, belong in this survey.

Examples of this type of monitoring include: reviews of seed mix, seed distribution, revegetation. Most of this kind of monitoring is related to vegetation. "Reclamation monitoring" might be an acceptable phrase to capture this kind of work.

Additional question: Should the survey capture longer-term trends as well (i.e., are you spending a lot less time establishing baseline and monitoring today than in the 1980s)?

Answer: Yes. Less time spent, and more work done by contractors.

2. There are 3 demographic questions at the beginning of the survey. We didn't ask for your name. Would asking for participant name have any possible bias on survey completion? Were the demographics we asked you to complete appropriate? Any chance these might bias people's willingness to respond and/or to be fully open and candid?

Answer: When the answers are rolled up, my participation will be somewhat anonymous. That anonymity should be made clear at the start of the survey.

3. Question 4 asks you to estimate the time you spend in monitoring activities. Do you think you were able to accurately estimate this time within the categories provided? Were the categories too specific or too finely differentiated? What is the threshold for monitoring activity below which you don't think people can effectively fill out the survey, now that you know what the survey is like? Will you each tell us the percent of time you spend in monitoring activity (record and average)?

Answer: The question only works for the Renewable Resource disciplines.

4. Were you able to find the monitoring activities you do in the categories provided in question 5a-5c without needing to stretch what you do to fit a category? If not, what category(ies) is needed? What percent of the monitoring activity time you spend is accounted for by the 3 monitoring activities you selected in question 5a-5c (record each person's response and average. Keep the distribution for comparison to the other pilot sites.)? Please review the lists again with us. Are there any other major monitoring activities that are not covered by these categories? (Check the data to see if anyone answered "Other" in 5d-5f. If so, check with the broader group to see how major these other activities are and whether or not we feel adding them to the list is warranted.)

Answer: The survey should ask "What are you monitoring for, and why" Structure the drop down around RHA, Permit Renewal, Special Status Species, Stocking Rate Confirmation.

Next, the survey should then ask: “Are the data collected qualitative or quantitative?”

Need to add measures for surface disturbance, etc.

Might structure the drop down around goals of a land use plans (e.g. desired plant community).

Assessment of rangeland health and monitoring of rangeland health are very different. The drop downs should clarify that.

5. For 6a, 7a and 8a, were 3 techniques sufficient to cover the majority of the monitoring you do? If not how many more do you need to cover 80% of what you do?
6. (Do our data for 6b, 7b, and 8b jive with the estimate they gave us live in q2 above? If not, check out the discrepancy and figure out how to get to the core of the issue.)

Answer: Use drop down menus. Add techniques related to monitoring compliance with lease stipulations.

7. In 6c, 7c, and 8c, PEs were provided. Were you able to find the appropriate PEs for the monitoring work you do? If not, why not? Do you think that the PEs you use accurately reflects the work that is accomplished in monitoring (this is a qualitative verbal response to validate question 6d, 7d and 8d)?

Answer: Recreation monitoring might include WSA monitoring. Why isn't this in the drop down for PEs? PH – Program management of rangelands. JA and other “J”s include a component of checking up on the project.

The survey taker should be able to select more than three.

8. Did the alternatives in 9a-11a work for you without having to choose “other”? If not, i.e. you chose “other,” what did you specify? Did you choose other for these 3 questions more than once? Are these “other” drivers ones you think we need to add to the survey? Why or why not? (If we can tell this from the data, modify this query to show that we've reviewed the data.)

Answer:

9. Now that you have the gist of the way we're reviewing each question, let's look at 12a-12g as a group and as I call out each question, just give us any feedback you

may have about how well the alternatives worked or not, and what changes we might need to make to make the survey work more broadly across field offices. (Display on screen and read each question as it is called out, wait for a response from anyone in the group, if we get responses, record each one and go on to the next question.) Did you answer 12h-comment block? If so, what did you say? Explain that some more to us. Ditto for 13a-13h; 14a-14h.

Answer: Delete “for” in question 12a. Consider using percentages. Re-structure question to ask about “individuals,” not staff. Re-write 12e altogether – don’t emphasize supervision, but try to tease out that there are no protocols for some data collection. 12f re-write to change “initially” to “collected in the field”. 12G Delete “yes/no” and replace with something about frequency of collection.

10. Questions 15-21 ask about monitoring in general, rather than by activity. Were you able to effectively answer each of these in a general way as posed? If not, for which questions is your answer it depends on the activity? If so, is this the exception or the rule? Now let’s look at each one and record any suggestions or issues you have.

Before 15, add a question “Is there BLM guidance on this type of monitoring?”

Q16 Change “formal” to “written.” Clarify whether this tiers from a Land Use Plan or an Activity Plan.

Q17 Add “select all that may apply.”

Q 20 Delete “protests and/or” “has the quality of, or lack of monitoring data”.

11. For 22a, 23a, and 24a did you answer “other”? If so, what did you specify? Do you think that should be added, i.e. is it widely enough used that many field offices will know about it?

12. x out of y of you answered not applicable or don’t know to 22b, 23b or 24b. Say more about why.

No Problems. Clear

13. Any issues with 22c, 23c, or 24c?

No Problems. Clear

14. Any issues with 25-27?

No Problems. Clear

15. 28-34 ask to generalize across activities. Were you able to do this and still think you are providing us with useful data? If not, which questions didn't work as generalizations? Now let's go through each one and get your feedback.

Question 28 is unclear. Clarify "appropriate audience."

16. Any other comments about the survey?

17. Steve, will you review the purpose of the survey again for us all? Now that you've heard Steve review the purpose and we've completed the survey review, are there any other questions that you think are critical to ask?

18. Do supervisors or managers need anything different or can they answer the same questions accurately? How best should supervisors be queried about this stuff, if at all?

19. Team, do you have any other questions? (Recorder should record both the new questions team members ask and the response to these questions by the participants).

20. Do you have any other questions for us?

21. Given our purpose and the current state of the survey, assuming we improve it ala your comments, do you think this is a reasonable methodology to get the data we need?

Appendix D: Survey Announcement Letter and Survey

IM 2006-169 - Survey of AIM Activities

Hello _____ Field Managers and AFMs,

You are receiving this email because your office is one of 36 that are being asked to participate in a survey of assessment, inventory, and monitoring (AIM) activities conducted by the BLM. The IM that asks for the help of personnel in your office can be found at: <http://web.blm.gov/internal/wo-500/directives/dir-06/im2006-169.html>. This IM, with a due date of July 21, also provides background on the effort to develop a 'national monitoring strategy' that may help you and your staff understand the broader purposes that this questionnaire supports.

As indicated in the IM, results from the survey are critical to the Bureau's plans to implement a strategic vision for AIM activities. We are developing a strategy to enhance the efficiency and effectiveness of our field operations, report conditions at the national level, and also to improve our ability to use AIM information for more than one purpose and at more than one scale.

All of us who are involved in developing a national strategy understand that demands on our field staff are increasing all the time, and that many of the resource specialists who should take this survey are especially busy at this time of year. That said, the web-based survey takes just 30 minutes to complete, and is designed to describe the nature of AIM work in a way that will maximize its utility for a long time to come. No one is being compelled to take the survey, but we think that most of your staff members who do this kind of work will 'see themselves' in it and understand immediately why a broad-based questionnaire of this kind is important to a strategic effort. The survey tool has already been tested in three field offices, refined several times, and was designed by a contractor to produce statistically significant, meaningful results.

Who Should Take the Survey?

Resource specialists who gather AIM information during any part of their work year are expected to take the survey. These people are most often focused on assessments and inventories of resource condition, and monitoring the effectiveness of our own management actions. Individuals focused on compliance with permit terms are not the target audience, unless their work also includes attempts to measure whether permits are effective and whether the permit terms should be modified. Anyone involved in establishing numbers of recreational uses and/or users should also take the survey, as should anyone involved in recording changes in condition over time that result from recreational uses.

Supervisors of resource specialists and their managers should also take the survey, as should a representative sample of other 'consumers' of AIM information (e.g., planners). Fewer questions will apply to these individuals, and so it will take them (including each of you) only a few minutes to complete the survey. It's important that each of you

participate to help us document the connection between AIM information collected on-the-ground and the management decisions that we make.

Managers and senior technical specialists in the State Office may also take the survey using a different web link, which I can provide separately. Their information will be kept separate from that of the 36 field offices, to keep the survey as focused on THE FIELD as much as possible.

Answers to the survey are completely anonymous. We will know the number of people from your field office who completed it but will not know the names of any of the respondents.

How Do I Access the Survey?

The survey is available at: <http://www.surveysolutions.com/blm/monitor06.htm>. Click on the web link and you will be brought to a series of input screens that provide multiple choice options and pull-down menus.

Why Was My Office Selected?

The 36 field offices were randomly selected to provide a representative sample of the Bureau's activities and operational settings.

What Happens Next?

Expect to receive a phone call today or tomorrow from one of the contacts listed in the IM, or contact us directly. We will be happy to answer any questions you may have.

What Happens After the IM Due Date?

After July 21, the contractor who helped develop the survey will be asked to tabulate results and reach conclusions about the nature and organization of BLM's AIM information. These results will be shared with the ELT in draft form in September, and used as part of a Business Process Review in 2007 that will be designed to develop enterprise solutions to our AIM data collection and storage needs. The survey needs to be completed by the IM due date to keep pace with these other commitments. We expect to make the findings available throughout the Bureau some time later this year.

Thank you for making time for this important effort, which we in the Washington Office believe is a necessary step in making sure that our eventual AIM strategy reflects the reality and needs of the field.

Steve Tryon
Project Manager
BLM National Monitoring Strategy
202-452-5099

Text Version of On-Line Monitoring Survey

(logical branching not shown in this view)

Purpose: Thank you for agreeing to take this survey. The purpose of this survey is to help the BLM understand the nature and scope of its land-health related resource monitoring efforts, primarily at the Field Office level. The survey will also help determine whether our plans and management actions are having the desired effects. When combined with other survey responses, your answers will be used to understand the following broad questions about the BLM as a whole:

- What data are we collecting regarding natural resource conditions, and with what frequency?
- Why are we collecting those data?
- How are data collected?
- How are data stored and analyzed?
- How, and by whom, are the data being used? In particular, does analysis of the data lead to management recommendations and does it help the BLM understand conditions and trends?
- Does analysis of the data help us determine our effectiveness, and thereby help us focus our investments?

This survey is designed to gain an understanding of the overall status of the Bureau's monitoring program, not to evaluate individual employees' monitoring activities.

Definition and Scope: For purposes of this survey, we refer to inventory, assessment, and monitoring simply as "monitoring", but we're really interested in all three activities. Monitoring activities could include data collection, data analysis and presentation, supervision of employees who monitor, administration of monitoring contracts, etc. By data collection we mean - collecting data in the field or remotely (e.g. from satellite imagery, aerial photos, etc.), or by other means. The data collected could be qualitative or quantitative.

This scope of this survey is land health-related resource monitoring. Respondents should not include compliance activities such as inspection and enforcement, use supervision, or permit compliance unless it is tied to monitoring of resource impacts such as soil erosion, revegetation success, etc.

Confidentiality: Responses to the statements in this survey will be summarized and represented statistically. The survey process is structured to ensure that individual employees are not identified. The individual survey responses will not be reviewed by management.

Who should take this survey: This survey should be completed by employees involved with monitoring, inventories or assessments relating to land health. This includes employees who collect and/or analyze monitoring data as well as those who may use monitoring data secondarily, such as managers or supervisors.

Instructions: The survey should take about 30 minutes to complete. Please answer the questions to the best of your ability. *Your monitoring activities are likely to vary from year to year. When answering the survey questions, please characterize your activities over the last three years.*

Required questions are indicated with a red asterisk (*). Please use the browser's back button if you want to check your answers from a previous screen. You will need to complete the survey in one session (you can't store partial results then log-on later).

If you would like to clarify the meaning or intent of any of the following questions, please call Dan Muller at (303) 236-7198 or Jenna Whitlock at (202) 452-5157.

S. Please complete the following general questions about your job, where you work and your experience with monitoring.

<hr>

required *

1. In what office do you work? *

- ☐ Alturas Field Office
- ☐ Anchorage Field Office
- ☐ Artic Field Office
- ☐ Ashland Resource Area
- ☐ Bakersfield Field Office
- ☐ Barstow Field Office
- ☐ Battle Mountain Field Office
- ☐ Bishop Field Office
- ☐ Bruneau Field Office
- ☐ Buffalo Field Office
- ☐ Elko Field Office
- ☐ Ely Field Office
- ☐ Glendale Resource Area
- ☐ Glenwood Springs Field Office
- ☐ Grand Junction Field Office
- ☐ Gunnison Field Office
- ☐ Kemmerer Field Office
- ☐ Kingman Field Office
- ☐ Klamath Falls Resource Area

- ☐ Lake Havasu Field Office
- ☐ Lewistown Field Office
- ☐ Little Snake Field Office
- ☐ Malheur Resource Area
- ☐ Mile City Field Office
- ☐ Newcastle Field Office
- ☐ Price Field Office
- ☐ Roswell Field Office
- ☐ Safford Field Office
- ☐ Saguache Field Office
- ☐ Salmon Field Office
- ☐ Salt Lake Field Office
- ☐ Socorro Field Office
- ☐ South River Resource Area
- ☐ Tucson Field Office
- ☐ Ukiah Field Office
- ☐ Upper Snake Field Office
- ☐ Other

1a. Other

Please specify _____

2. What is your job title? *

- ☐ Ecologist
- ☐ Botanist
- ☐ Botany Technician
- ☐ Rangeland Management Specialist
- ☐ Range Technician
- ☐ Forester
- ☐ Forestry Technician
- ☐ Soil Scientist
- ☐ Fishery Biologist
- ☐ Fishery Technician
- ☐ Riparian Specialist
- ☐ Wildlife Biologist
- ☐ Wildlife Technician
- ☐ Biological Technician
- ☐ Archaeologist
- ☐ Archaeological Technician
- ☐ Outdoor Recreation Planner
- ☐ Recreation Technician
- ☐ Wilderness Specialist
- ☐ Natural Resource Specialist
- ☐ Hydrologist
- ☐ Hydrology Technician
- ☐ Environmental Protection Specialist

- ☐ Geologist
- ☐ Surface Protection Specialist
- ☐ Biologist
- ☐ Petroleum Engineer Technician
- ☐ Petroleum Engineer
- ☐ GIS Specialist
- ☐ Wild Horse and Burro Specialist
- ☐ Realty Specialist
- ☐ Weed Specialist
- ☐ Planning and Environmental Coordinator
- ☐ Physical Scientist
- ☐ Field Manager
- ☐ Assistant Field Manager
- ☐ Other

2a. Other

Please specify _____

required *

3a. How many years have you been involved in monitoring activities during your career? (Choose one.)

- ☐ 0-5 years
- ☐ 6-10 years
- ☐ 11-15 years
- ☐ 16-20 years
- ☐ more than 20 years

3b. How has the amount of time you spend in monitoring activities changed over time? (Choose one.)

- ☐ substantially increased
- ☐ increased
- ☐ no change
- ☐ decreased
- ☐ substantially decreased

3c. Are you a Manager or Supervisor who uses, but does not routinely collect or analyze monitoring data? (Choose one.) *

- ☐ Yes
- ☐ No

required *

4. About what percent of your time do you spend involved in monitoring activities (field data collection, data analysis and presentation, supervision of employees who monitor, monitoring contract administration, etc.)? (Choose one.) *

- ☐ 0%
- ☐ 1 to 9%
- ☐ 10 to 29%
- ☐ 30 to 49%
- ☐ 50 to 69%
- ☐ 70 to 99%
- ☐ 100%

S. This section of the survey is intended to identify your top three monitoring activities, and what type of data are being collected. Remember, "monitoring" includes inventory, assessment and monitoring. Please select your top three monitoring activities from the drop down menus. You'll later be asked a series of questions about each of your top activities. Be sure to select "Not Applicable" if you have less than three top activities.

required *

First Monitoring Activity required. If you have less than three top activities, please select "Not Applicable" for second or third monitoring activity.

What are your top three monitoring activities? *

Please click the link below for additional description of Monitoring Activities.

<a

href="http://www.surveysolutions.com/blm/definitions.htm/"target="_blank"

>Definitions of Categories

5a. First Monitoring Activity

- ☐ Soil or Soil Biota
- ☐ Rangeland/Upland Habitat
- ☐ Forest/Woodland Habitat
- ☐ Fire/Fuels
- ☐ Invasives
- ☐ ESR or Restoration
- ☐ Riparian
- ☐ Aquatic Habitat
- ☐ Water Quality or Quantity
- ☐ Special Status Plants
- ☐ Animal Population
- ☐ Air Quality
- ☐ Climate
- ☐ Lands or Minerals
- ☐ Recreation
- ☐ Travel & Transportation
- ☐ Wilderness/WSA, National Trails or Rivers
- ☐ Other:

Q. Number Capture

No _____

5d. You selected Other for your first monitoring activity.

Please specify _____

5e. You selected Other for your second monitoring activity.

Please specify _____

5f. You selected Other for your third monitoring activity.

Please specify _____

6a. What type of data are you collecting when you are monitoring %Q5aLBL%%Q5d_1%? (Please select all that apply.)

- ☐ Soil Survey and/or Investigations
- ☐ Contaminant sampling and lab analysis
- ☐ Erosion modeling, visual observations, and/or measurement
- ☐ Rangeland Health Evaluation, using Interpreting Indicators of

Rangeland Health

- ☐ Soil/water repellency (i.e. post-fire)
- ☐ Soil Aggregate Stability
- ☐ Soil moisture by meter, gravimetric, etc
- ☐ Soil compaction: Densimeters, gravimetric, resistance

(penetrometers), etc.

☐ Cover, using Daubenmire, Line Intercept, Line Point Intercept, Cover Board, Quadrat, Step Point, etc. (Includes biological soil crusts.)

☐ Soil Chemical Properties: electrical conductivity (EC), pH, Sodium Absorption Ratio (SAR), etc.

- ☐ Slope Stability Analysis: direct observation, modeling, photos, etc.
- ☐ **Other: Fill in the blank**

☐ Cover, using Daubenmire, Line Intercept, Line Point Intercept, Cover Board, Quadrat, Step Point, etc.

☐ Frequency, using Nested Plot Frequency, etc.

☐ Density, using Quadrat, etc.

☐ Production, using Double Weight Sampling, Harvest, Comparative Yield, etc. (not ESI)

☐ Seral Status, using Ecological Site Inventory (ESI)

☐ Structure, using Robel Pole, Cover Board, Community Structure Analysis (CSA) etc.

☐ Vigor, i.e. seed head production, reproductive tiller, adequate root development, etc.

☐ Vegetation Composition, using Dry-Weight, etc.

☐ Utilization, including herbaceous and/or woody species using various techniques

☐ Rangeland Health Evaluation, using Interpreting Indicators of Rangeland Health

☐ Other Qualitative techniques like estimation of apparent trend, etc.

☐ Habitat Suitability or Quality Assessment (i.e. sensitive species habitat assessments)

☐ Habitat Mapping (i.e. shrub stands, suitable, marginal or unsuitable habitat)

☐ Current Vegetation Survey (CVS)

☐ Vegetation or plant community inventory and/or mapping

☐ Photo plots only

☐ **Other: Fill in the blank**

- ☐ Stand Exam
- ☐ Site productivity, include TPCC, etc.
- ☐ FORVIS Inventory
- ☐ Microstorms Inventory
- ☐ Fire Regime Condition Class (landscape scale) using Interagency FRCC Guidebook methodology, etc.
- ☐ Current Vegetation Survey (CVS)
- ☐ Regeneration Surveys
- ☐ Habitat Suitability or Quality Assessment (i.e. sensitive species habitat assessments)
- ☐ Habitat Mapping (i.e. shrub stands, suitable, marginal or unsuitable habitat)
- ☐ Disease or Die Off
- ☐ Vegetation or plant community inventory and/or mapping
- ☐ **Other: Fill in the blank**

-
- ☐ Pre and Post Treatment species composition using FIREMON techniques, etc.
 - ☐ Fuel Loading using Planar Intersect, FIREMON protocols, etc.
 - ☐ Pre and Post Treatment stand level vegetation departure using Interagency FRCC Guidebook methodology, etc.
 - ☐ Fire Regime Condition Class (landscape scale) using Interagency FRCC Guidebook methodology, etc.
 - ☐ Pre and Post Treatment canopy cover using line intercept, point cover, FIREMON protocols, etc.
 - ☐ Burn Severity, using Normalized Burn Ratio, Composite Burn Index (outlined in FIREMON protocols), etc.
 - ☐ Cover or bare ground using FIREMON protocols
 - ☐ Burn Mortality using FIREMON protocols
 - ☐ Tree Data (species, size class, DBH, density) using fixed plot sampling described in FIREMON.
 - ☐ Fire Behavior Variables (flame length, flame height, residence time, flame zone depth, rate of spread) using FIREMON protocols or Fire Effect Monitoring Guidebook
 - ☐ Current Vegetation Survey (CVS)
 - ☐ Successional Development using a plot sampling methods, etc.
 - ☐ **Other Fill in the Blank**

-
- ☐ Population Inventory and Mapping (weed species, location, acreage, density, etc.) using various techniques.
 - ☐ Treatment effectiveness and effects on non-target using line intercept, quadrat, etc.
 - ☐ Population growth rate (rate of spread) using various techniques.
 - ☐ **Other: Fill in the blank**
-

- ☐ Cover, using Daubenmire, Line Intercept, Line Point Intercept, Cover Board, Quadrat, Step Point, etc.
- ☐ Frequency, using Nested Plot Frequency, etc.
- ☐ Density, using Quadrat, etc.
- ☐ Production, using Double Weight Sampling, Harvest, Comparative Yield, etc.
- ☐ Community Structure Analysis (CSA), cover, density, frequency and structure
- ☐ Vigor, i.e. seed head production, reproductive tiller, adequate root development, etc.
- ☐ Photo plots only
- ☐ **Other: Fill in the blank**

-
- ☐ Functioning condition using Proper Functioning Condition (PFC)
 - ☐ Utilization, including herbaceous and/or woody species using various techniques
 - ☐ Vegetation composition, using techniques such as Green Line, PachFish Indicator Biological Opinions (PIBO), Multiple Indicator Monitoring, Current Vegetation Survey (CVS), photo plots, Vegetative Cross Section Composition, etc
 - ☐ Community Typing or Inventory, Pfister and Hansen, Ecological Site Inventory, Winward, etc.
 - ☐ Age Class, using aerial photos, etc,
 - ☐ Streambank Stability/Alternation
 - ☐ **Other: Fill in the blank**

-
- ☐ Habitat features (spawning gravel quality, large woody debris, width-depth ratio, pool-riffle ratio, bankfull width, channel entrenchment, sinuosity, substrate, bank stability, etc) using Rosgen, Hankin-Reeve, etc.
 - ☐ Channel classification, using Montgomery-Buffington, Rosgen, etc.
 - ☐ Functioning condition using Proper Functioning Condition (PFC)
 - ☐ Instream Flow Incremental Methodologies (PHABSIM, RHABSIM)
 - ☐ PachFish Indicator Biological Opinions (PIBO)
 - ☐ **Other: Fill in the blank**

-
- ☐ Quality (temperature, sediment, water chemistry, other constituents, etc.) using direct measurement; continuous thermograph, light transmission, sediment collection, etc
 - ☐ Discharge using various gauges, weirs, stage measurements
 - ☐ Instream Flow Incremental Methodologies (PHABSIM, RHABSIM)
 - ☐ **Other: Fill in the blank**
 - ☐ Species presence, using complete population counts, intuitive controlled inventory, etc.
 - ☐ Population or site condition, using various techniques
 - ☐ Cover, using Daubenmire, Line Intercept, Line Point Intercept, Cover Board, Quadrat, Step Point, etc.

- ☐ Frequency, using Nested Plot Frequency, etc.
 - ☐ Density, using Quadrat, etc.
 - ☐ Production, using Double Weight Sampling, Harvest, Comparative Yield, etc.
 - ☐ Structure, using Robel Pole, Cover Board, Community Structure Analysis (CSA) etc.
 - ☐ Vegetation Composition, using Dry-Weight, etc.
 - ☐ Utilization, including herbaceous and/or woody species using various techniques
 - ☐ Photo plots only
 - ☐ **Other Fill in the Blank**
-

- ☐ Wild Horse and Burro population monitoring by various techniques (direct count, simultaneous double count, mark resight, etc.)
 - ☐ Special Status aquatic species using various techniques. Includes Survey and Manage.
 - ☐ Non-Special Status Aquatic species using electroshocking, netting, seining, macroinvertebrate collection, plankton netting, etc.
 - ☐ Special Status terrestrial species (game and non-game) using various techniques
 - ☐ Non-game terrestrial species (non-Special Status) using various techniques
 - ☐ Game terrestrial species (non-Special Status) using various techniques
 - ☐ **Other: Fill in the Blank**
-

- ☐ Photographic methods
 - ☐ Direct measure, gravimetric for PM-10,2.5
 - ☐ **Other: Fill in the Blank**
-

- ☐ Precipitation gauges
 - ☐ RAWS weather station
 - ☐ NOAA weather stations
 - ☐ **Other: Fill in the Blank**
-

- ☐ Unreclaimed Surface Disturbance using ocular estimates, line intercept, aerial photos, remote sensing, etc.
 - ☐ Successful Reclamation - Interim and Final; ocular estimate, line intercept, aerial photos, remote sensing
 - ☐ **Other: Fill in the Blank**
-

- ☐ Permitted recreation use, using direct measurement, observation, photo points, etc.
- ☐ Casual recreation use, using direct measurement, observation, photo points, etc.

- ☐ Non-WSR Rivers, using direct measurement and observations or other various techniques
 - ☐ Visitor numbers and demographics, using mechanical or automated counter, registration/permits, one-on-one interviews, formal surveys, personal observations, etc.
 - ☐ Visitor satisfaction, expectations and benefits, using one-on-one interviews, formal surveys, comment cards, personal observations, etc.
 - ☐ Recreation site condition, using condition assessments, observation, photo points, etc.
 - ☐ Visual resources (VRM), using direct measurement, observation, photo points, etc.
 - ☐ Recreation use or other physical impacts, using direct measurement and observation, etc.
 - ☐ **Other: Fill in the Blank**
-

- ☐ Visitor numbers and demographics, using mechanical or automated counter, registration/permits, one-on-one interviews, formal surveys, personal observations, etc.
 - ☐ Visitor satisfaction, expectations and benefits, using one-on-one interviews, formal surveys, comment cards, personal observations, etc.
 - ☐ Route inventory
 - ☐ Route condition
 - ☐ Noise (decibel), using direct measurement, etc.
 - ☐ Recreation site condition, using condition assessments, observation, photo points, etc.
 - ☐ Visual resources (VRM), using direct measurement, observation, photo points, etc.
 - ☐ Recreation use or other physical impacts, using direct measurement and observation, etc.
 - ☐ **Other: Fill in the Blank**
-

- ☐ Requirements of enabling legislation (or proclamation), using various techniques
 - ☐ Wilderness characteristics, using various techniques
 - ☐ Wild and Scenic River values, using various techniques
 - ☐ National Historic or Scenic Trail characteristics, using various techniques, including use of Interagency Trail Data Standards, etc.
 - ☐ Linear evaluation or assessment (rivers, trails, routes, etc.) using field observations or other various techniques
 - ☐ **Other: Fill in the Blank**
-

- ☐ **Other: Fill in the Blank**
-

7a. Of the time you spend monitoring, what percent do each of the following monitoring activities take?

%Q5aLBL%%Q5d_1%

%Q5bLBL%%Q5e_1%

%Q5cLBL%%Q5f_1%

☐ 0%

☐ 1 to 9%

☐ 10 to 29%

☐ 30 to 49%

☐ 50 to 69%

☐ 70 to 99%

☐ 100%

8a. Under what Program Elements (PEs) do you typically report %Q5aLBL%%Q5d_1% monitoring accomplishments (e.g. "widgets")?
(Please select all that apply.)

- ☐ BA - Inventory Recreation Resources
- ☐ BF - Assess Hazmat Sites
- ☐ BG - Assess Other Hazards (Non Hazmat or AML)
- ☐ BN - Inventory Water Resources
- ☐ BO - Inventory Soil Resources
- ☐ BP - Assess Watersheds
- ☐ BQ - Complete Ecological Site Inventory
- ☐ BR - Inventory Shrub/Grass/PJ Vegetation
- ☐ BS - Inventory for Presence of Invasive and/or Noxious Weeds
- ☐ BT - Inventory Forest/Woodland Vegetation
- ☐ BU - Inventory Lakes/Wetland Areas
- ☐ BV - Inventory Streams/Riparian Areas
- ☐ BY - Assess Linear Recreation Resources
- ☐ BZ - Assess Designated Rivers and Trails
- ☐ CB - Inventory Wildlife/Plan Habitat
- ☐ DJ - Evaluate Land Use Plans
- ☐ MA - Evaluate Recreation Areas
- ☐ MC - Conduct Census of Wild Horse and Burro Areas
- ☐ MB - Evaluate Forest/Woodland Treatments
- ☐ MD - Monitor Wilderness and WSAs
- ☐ MF - Evaluate Designated Rivers and Trails
- ☐ MG - Monitor and Maintain Hazmat & NRDAR Sites
- ☐ MI - Monitor Air Resources/Climatic Conditions
- ☐ MJ - Evaluate Rangeland Health
- ☐ MK - Evaluate Weed Treatments
- ☐ ML - Monitor Grazing Allotments
- ☐ MN - Monitor Lake/Wetland Habitat
- ☐ MO - Monitor Stream/Riparian Habitat
- ☐ MP - Monitor WHB HMAs
- ☐ MQ - Monitor Terrestrial Habitat
- ☐ MR - Monitor Species Populations
- ☐ MT - Monitor Fuels Treatment
- ☐ MU - Monitor Water Resources
- ☐ MV - Evaluate Linear Recreation Management Objectives
- ☐ MX - Monitor Shrub/Grass Vegetation Treatments
- ☐ MZ - Monitor Fire Rehab Treatments
- ☐ Don't know
- ☐ Other, please specify _____

9a. How well do these PEs represent the %Q5aLBL%%Q5d_1% monitoring work performed?

- ☐ Not at All
1

- ☐
2
- ☐
3
- ☐
4
- ☐ Very Well
5

9aa. How could PEs be changed to better represent the work performed?
 Comment: (Narrative response.)

S. This section of the survey will help identify why monitoring data are collected.
 <hr>

10a. To what extent do the following drive monitoring? Please indicate a percentage, totaling 100% for each monitoring activity.

	%Q5aLBL%	%Q5bLBL%
	%Q5d_1%	%Q5e_1%
Permits or other Use Authorizations (e.g. Application for Permit to Drill (APD), grazing permit, timber sale, special recreation permit, etc. This includes monitoring identified in Biological Opinions (BOs) or Environmental Assessments (EAs) associated with permit issuance.)?	_____	_____
Resource Management Plan decision Projects not subject to permitting (for example inventory or monitoring for a restoration project, fuels treatment, etc. This includes any monitoring identified in BOs or EAs associated with projects.)		
Program direction (e.g. Special Status Species, Wildlife, Fire/Fuels, WH&B, etc.)		
Court Order or Settlement		
Implementation		
Other , please specify:		

10aa. other

1 _____

11a. You indicated Other (something other than Permits, RMPs, projects, program direction, or court order) most drove monitoring. Please explain further why collecting those data was a priority?

12a. You indicated that "Permits or other Use Authorizations" drove monitoring. Which of the following activities most drives your permit-related monitoring?

%Q5aLBL%%Q5d_1%
%Q5bLBL%%Q5e_1%
%Q5cLBL%%Q5f_1%

- ☐ Fluid
minerals
- ☐ Solid
minerals
- ☐ Lands and Realty
actions
- ☐ Grazing
- ☐ Timber
sales
- ☐ Special recreation
permits
- ☐ Other, please specify

12aa. Other Specify.

- 1

- 2

- 3

13a. Which of the following most applies to the need for your monitoring data? Please rate on a scale of 1 to 5, with 5 being the most applicable.

	%Q5aLBL %%Q5d_1 %	%Q5bLBL %%Q5e_1 %
Data are needed to as a foundation for an RMP or other plan	☐ 1 ☐ 2	☐ 1 ☐ 2
Data are needed to authorize a use or issue a permit	☐ 3 ☐ 4	☐ 3 ☐ 4
Data are needed to determine if permit terms and conditions or stipulations are adhered to	☐ 5 ☐ Not Applicable	☐ 5 ☐ Not Applicable
Data are needed to determine if management actions are having the desired effect, or if objectives are met		
Data are needed to determine if estimated impacts were accurately projected in NEPA documentation		
Other, please specify		

13aa. Other Specify

1 _____

S. This section of this survey will help identify how monitoring data are collected (including frequency of collection).

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14a. Please indicate what percent of monitoring data are collected by each of the following (should equal 100% for each monitoring activity.)

	%Q5aLBL %%Q5d_1 %	%Q5bLBL% %Q5e_1%
Permanent Employees	_____	_____
Temporary Employees (including those on 1039 or Term appointment)		
BLM Contractor		
Volunteers		
Agreements (e.g. through Challenge Cost Share)		
Partners		
User or permittee		
Other State or Federal agency		
Other, please specify		

14aa. Other Specify

1 _____

15a. What percent of the data are collected through user or permittee contributed funds or through cost recovery.

%Q5aLBL%%Q5d_1%

%Q5bLBL%%Q5e_1%

%Q5cLBL%%Q5f_1%

☐ 0%

☐ 1 to 9%

☐ 10 to 29%

☐ 30 to 49%

☐ 50 to 69%

☐ 70 to 99%

☐ 100%

16a. How are monitoring data collected (select all that apply)?

%Q5aLBL%%Q5d_1%

%Q5bLBL%%Q5e_1%

%Q5cLBL%%Q5f_1%

☐ Collected in the field?

☐ Remotely sensed

(e.g. color infrared, true color, etc.)?

☐ Modelled?

☐ Other, please specify

16aa. Specify

1 _____

2 _____

3 _____

17a. Which of the following best represents the means by which monitoring data are initially recorded in the field?

%Q5aLBL%%Q5d_1%

%Q5bLBL%%Q5e_1%

%Q5cLBL%%Q5f_1%

☐ Hard copy notation

(e.g. recorded on paper)

☐ Electronic (e.g. PDA, laptop, notebook, GPS)

☐ Other, please specify

17aa. Specify

1 _____

2 _____

3 _____

18a. How often are monitoring data reviewed by a peer or supervisor prior to use in a document?

%Q5aLBL%%Q5d_1%

☐ Never
1

%Q5bLBL%%Q5e_1%

☐
2

%Q5cLBL%%Q5f_1%

☐
3

☐
4

☐ Always
5

☐ Not
Applicable

19a. How well are individuals who collect monitoring data trained on techniques and protocols for data collection?

%Q5aLBL%%Q5d_1%

☐ Not very well
1

%Q5bLBL%%Q5e_1%

☐
2

%Q5cLBL%%Q5f_1%

☐
3

☐
4

☐ Very Well
5

☐ Not
Applicable

20a. Is there sufficient guidance (Technical References, Handbooks, Manuals, Instruction Memoranda, etc.) to ensure that monitoring data are collected in accordance to Bureau protocols?

%Q5aLBL%%Q5d_1%

☐ Insufficient
1

%Q5bLBL%%Q5e_1%

☐
2

%Q5cLBL%%Q5f_1%

☐
3

☐
4

☐ Sufficient
5

☐ Don't Know

21a. How often is guidance (Technical References, Handbooks, Manuals, Instruction Memoranda, etc.) followed when collecting data?

%Q5aLBL%%Q5d_1%

☐ Never
1

%Q5bLBL%%Q5e_1%

☐
2

%Q5cLBL%%Q5f_1%

☐
3

☐
4

☐ Always
5

☐ Not applicable
 (e.g.
there is not guidance)

22a. Are monitoring data collected with techniques that are *consistent enough over time* so that a meaningful trend can be identified?

%Q5aLBL%%Q5d_1%

☐ Yes

%Q5bLBL%%Q5e_1%

☐ No

%Q5cLBL%%Q5f_1%

☐ Not Applicable

24a. Are monitoring data collected *often enough* to identify meaningful trend and support decisions.

%Q5aLBL%%Q5d_1%

☐ Yes

%Q5bLBL%%Q5e_1%

☐ No

%Q5cLBL%%Q5f_1%

☐ Not applicable

24aa. If you indicated no to any of the above, please explain why.

24aaa. How often are monitoring activities based on an ecological model (description of the relationship between species biology and management activities).

%Q5aLBL%%Q5d_1%

☐ Never
1

%Q5bLBL%%Q5e_1%

☐
2

%Q5cLBL%%Q5f_1%

☐
3

☐
4

☐ Always
5

☐ Not applicable

S. This section of the survey will help understand how data that you collect are stored and analyzed.

<hr>

25a. How are monitoring data stored or managed? (select all that apply)

- | | %Q5aLBL
%%Q5d_1
% | %Q5bLB
L%%Q5
e_1% |
|---|----------------------------|----------------------------|
| Hard copy (e.g. paper files, mylar) | ☐ 1 | ☐ 1 |
| Commercial, off the shelf spreadsheet/database (e.g. Excel, Access, etc.) | | |
| Commercial GIS (e.g. ArcInfo, etc.) | | |
| Commercial statistical software (e.g. SPSS, etc.) | | |
| BLM National application (e.g. ESR database, etc.) | | |
| Application developed by State Office (e.g. VMAP, ISMS, etc.) | | |
| Application developed locally, at Field or District Office | | |
| Applications developed by other Federal or State agencies (e.g. National Hydrography Dataset, Aquatic Resources Information System, NRCS Web Soil Survey) | | |
| Other, please specify: | | |

25aa. Specify

1 _____

26a. How much of the monitoring data can be linked to GIS?

- | %Q5aLBL%%Q5d_1% | %Q5bLBL%%Q5e_1% | %Q5cLBL%%Q5f_1% |
|--|-----------------|-----------------|
| ☐ Almost all
of the data | | |
| ☐ Most of
the data | | |
| ☐ Some of
the data | | |
| ☐ Little of
the data | | |
| ☐ None of
the data | | |
| ☐ Not Applicable
 Don't know | | |

27a. Of the monitoring data collected to date which is appropriate for GIS, how much is currently in GIS?

- | %Q5aLBL%%Q5d_1% | %Q5bLBL%%Q5e_1% | %Q5cLBL%%Q5f_1% |
|-------------------------------------|-----------------|-----------------|
| ☐ More than 79% | | |
| ☐ 60-79% | | |
| ☐ 40-59% | | |
| ☐ 20-39% | | |
| ☐ Less than 20% | | |

S. This section of the survey will help identify who has access to and uses the monitoring data, and how the data are used.

<hr>

28a. For %Q5aLBL%%Q5d_1%

How effectively do the data allow you to describe current existing
condition of the land?

☐ Very
Ineffectively
1

How effectively do your monitoring data explain changes in resource
condition or trend?

☐

2

☐

3

☐

4

☐ Very

How effectively are trends in resource condition correlated with management
actions (e.g. stream conditions improve with improved grazing practices)?

Effectively
5

How effectively do multiple programs use the same monitoring data?

☐ Not Applicable
Don't know

How effectively are data aggregated to multiple levels
(e.g. across allotments, Planning Units, Field Offices, geographic regions)?

28b. For %Q5bLBL%%Q5e_1%

How effectively do the data allow you to describe current existing
condition of the land?

☐ Very
Ineffectively
1

How effectively do your monitoring data explain changes in resource
condition or trend?

☐

2

☐

3

☐

4

☐ Very

How effectively are trends in resource condition correlated with management
actions (e.g. stream conditions improve with improved grazing practices)?

Effectively
5

How effectively do multiple programs use the same monitoring data?

☐ Not Applicable
Don't know

How effectively are data aggregated to multiple levels
(e.g. across allotments, Planning Units, Field Offices, geographic regions)?

28c. For %Q5cLBL%%Q5f_1%

How effectively do the data allow you to describe current existing condition of the land?

How effectively do your monitoring data explain changes in resource condition or trend?

How effectively are trends in resource condition correlated with management actions (e.g. stream conditions improve with improved grazing practices)?

How effectively do multiple programs use the same monitoring data?

How effectively are data aggregated to multiple levels (e.g. across allotments, Planning Units, Field Offices, geographic regions)?

☐ Very Ineffectively

☐ 1

☐ 2

☐ 3

☐ 4

☐ Very Effectively

☐ 5
☐ Not Applicable
☐ Don't know

S. The following questions pertain to your Office's monitoring activities in general.

<hr>

29. What percentage of your Office's monitoring activities are conducted according to a monitoring plan?:

- ☐ More than 79%
- ☐ 60-79%
- ☐ 40-59%
- ☐ 20-39%
- ☐ Less than 20%
- ☐ Don't Know

29a. Which of the following monitoring activities are covered by a monitoring plan? (Select all that apply)

- ☐ Soil or Soil Biota
- ☐ Rangeland/Upland Habitat
- ☐ Forest/Woodland Habitat
- ☐ Fire/Fuels
- ☐ Weeds
- ☐ ESR or Restoration
- ☐ Riparian (lentic and lotic)
- ☐ Aquatic Habitat
- ☐ Water Quality or Quantity

☐ Special Status Plants (vascular and non-vascular). Includes Survey and Manage.

☐ Animal Population (vertebrate and invertebrate). Includes aquatic and terrestrial game and non-game, Survey and Manage, and Special Status, etc.

☐ Air Quality

☐ Climate

☐ Lands or Minerals

☐ Recreation (includes permitted and casual activities including dispersed, rivers, camping, climbing, caving, hunting, etc.)

☐ Travel & Transportation (roads, primitive roads, and trails and related travel types)

☐ Wilderness/WSA, National Trails or Rivers (includes wilderness, WSA, National Trails and/or Wild and Scenic Rivers)

☐ Other: _____

☐ Don't Know

31. How often are monitoring activities coordinated among the different programs in your office? (For example, range and wildlife studies are coordinated)? (Choose one)

☐ Never
1

☐
2

☐
3

☐
4

☐ Always
5

32. Within the last 3 years, has data quality, or lack of monitoring data been an issue in formal appeals of decisions, or lawsuits related to decisions?

☐ Yes

☐ No

☐ Don't know

33. When challenged in court, how often are decisions upheld?

☐ Never
1

☐
2

☐
3

☐
4

☐ Always
5

☐ Don't
Know

34. How often are the results of monitoring analysis data summarized in a written report?

☐ Never
1

☐
2

☐
3

- ☐
4
- ☐ Always
5
- ☐ Not
Applicable

34a. How often are monitoring data shared with the public?

- ☐ Never
1
- ☐
2
- ☐
3
- ☐
4
- ☐ Always
5

35. How often are monitoring data adequate (e.g. sufficient quantity and quality, appropriateness) to support land management decisions?

- ☐ Data usually
 inadequate to
 support decisions
1
- ☐

2
- ☐

3
- ☐

4
- ☐ Data usually
 adequate to
 support decisions
5
- ☐ Not
Applicable

36. Are resources available to meet mandatory monitoring requirements (e.g. from Biological Opinions, Court Orders, etc?)

- ☐ Never
1
- ☐
2
- ☐
3
- ☐
4
- ☐ Always
5
- ☐ Not
Applicable

37. How often do monitoring data help decide if land management actions taken by BLM are having the desired effect?

- ☐ Never
1
- ☐
2
- ☐
3
- ☐
4
- ☐ Always
5

38. How often does monitoring cause your Office to change land management actions? (For example, management practices have been changed because a new T & E species population is located, or water quality has degraded, etc.)

- ☐ Never
1
- ☐
2
- ☐
3
- ☐
4
- ☐ Always
5

38a. How often is the monitoring design reviewed and revised when management actions change.

- ☐ Never
1
- ☐
2
- ☐
3
- ☐
4
- ☐ Always
5

39. How effectively does monitoring help your Office determine land management priorities? (For example, if there is funding to treat only 50,000 acres of vegetation in poor condition, monitoring helps identify which acres to treat.)

- ☐ Very
 Ineffectively
1
- ☐

2
- ☐

3
- ☐

4
- ☐ Very
 Effectively
5

40. Please comment on how monitoring data analysis has helped determine priorities in your Field Office:
